

Practice: 642 - Water Well**Scenario: #1 - 4" cased****Scenario Description:**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur within 100 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock or irrigation. An average well depth is 250 feet. Well casings are 4" in diameter. Steel casing is installed to a depth of 110 feet.

Before Situation:

Livestock have insufficient water or are fenced from their water source. There is insufficient water for use in micro-irrigation.

After Situation:

Install a 250' deep well with 110' of 4" casing. Casing grouted to seal out surface water. Sufficient water is available for livestock or irrigation. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

Scenario Feature Measure: Total depth of well

Scenario Unit: Linear Foot

Scenario Typical Size: 250

Scenario Cost: \$5,014.11

Scenario Cost/Unit: \$20.06

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Rotary Drill Rig with Operator	1595	Rotary drill rig including equipment and power unit costs and labor.	Hour	\$172.56	6	\$1,035.36
Materials						
Grout, cement	1333	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$931.44	3	\$2,794.32
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.83	1	\$2.83
Well Cap, 4"	1785	Well cap, 4". Materials only.	Each	\$24.82	1	\$24.82
Well Casing, Metal, 4"	1809	Steel well casing, 4". Materials only.	Foot	\$7.87	110	\$865.70
Test, Standard Water Test, Well Water	309	Well Water Suitability test. Includes materials and shipping only.	Each	\$38.92	1	\$38.92
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	1	\$252.16

Practice: 642 - Water Well**Scenario: #2 - 4" Limited Casing****Scenario Description:**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur within 100 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock or irrigation. The area is known for swallow wells and minimal depth to bedrock. An average well depth is 150 feet. Well casings are 4-6" in diameter. Steel casing is installed to a depth of 30 feet.

Before Situation:

Livestock have insufficient water or are fenced from their water source. There is insufficient water for use in micro-irrigation.

After Situation:

Install a 150' deep well with 30' of 4" casing. Casing grouted to seal out surface water. Sufficient water is available for livestock or irrigation. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

Scenario Feature Measure: Total depth of well

Scenario Unit: Linear Foot

Scenario Typical Size: 150

Scenario Cost: \$2,176.51

Scenario Cost/Unit: \$14.51

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Rotary Drill Rig with Operator	1595	Rotary drill rig including equipment and power unit costs and labor.	Hour	\$172.56	4	\$690.24
Materials						
Test, Standard Water Test, Well Water	309	Well Water Suitability test. Includes materials and shipping only.	Each	\$38.92	1	\$38.92
Grout, cement	1333	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$931.44	1	\$931.44
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.83	1	\$2.83
Well Cap, 4"	1785	Well cap, 4". Materials only.	Each	\$24.82	1	\$24.82
Well Casing, Metal, 4"	1809	Steel well casing, 4". Materials only.	Foot	\$7.87	30	\$236.10
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	1	\$252.16

Practice: 642 - Water Well**Scenario: #3 - Typical Well, 6"****Scenario Description:**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur 100 - 600 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock or micro-irrigation. An average well depth is 400 feet. Well casings are 4-6" in diameter. Steel casing is installed to a depth of 150 feet.

Before Situation:

Livestock have insufficient water or are fenced from their water source. There is insufficient water for use in micro-irrigation.

After Situation:

Install a 400' deep well with 150' of 6" casing. Casing grouted to seal out surface water. Sufficient water is available for livestock or micro-irrigation. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

Scenario Feature Measure: Total depth of well

Scenario Unit: Linear Foot

Scenario Typical Size: 400

Scenario Cost: \$8,473.70

Scenario Cost/Unit: \$21.18

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Rotary Drill Rig with Operator	1595	Rotary drill rig including equipment and power unit costs and labor.	Hour	\$172.56	8	\$1,380.48
Materials						
Grout, cement	1333	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$931.44	5	\$4,657.20
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.83	1	\$2.83
Well Cap, 6"	1786	Well cap, 6". Materials only.	Each	\$32.49	1	\$32.49
Well Casing, Metal, 6"	1810	Steel well casing, 6". Materials only.	Foot	\$13.67	150	\$2,050.50
Well Screen, stainless steel, 6"	1995	6" Stainless steel well screen. Materials only.	Foot	\$59.12	1	\$59.12
Test, Standard Water Test, Well Water	309	Well Water Suitability test. Includes materials and shipping only.	Each	\$38.92	1	\$38.92
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	1	\$252.16

Practice: 642 - Water Well**Scenario: #4 - High Volume Typical Well, 8" or greater****Scenario Description:**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur 100 - 600 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock or micro-irrigation.

Before Situation:

There is insufficient water for use in irrigation.

After Situation:

A well is drilled with 150' feet of 8" casing and a total depth of 500'. Sufficient water is available for livestock or micro-irrigation. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

Scenario Feature Measure: Total depth of well

Scenario Unit: Linear Foot

Scenario Typical Size: 500

Scenario Cost: \$15,683.11

Scenario Cost/Unit: \$31.37

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Rotary Drill Rig with Operator	1595	Rotary drill rig including equipment and power unit costs and labor.	Hour	\$172.56	32	\$5,521.92
Materials						
Test, Standard Water Test, Well Water	309	Well Water Suitability test. Includes materials and shipping only.	Each	\$38.92	1	\$38.92
Grout, cement	1333	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$931.44	7	\$6,520.08
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.83	1	\$2.83
Well Cap, 8"	1787	Well cap, 8". Materials only.	Each	\$48.70	1	\$48.70
Well Casing, Metal, 8"	1811	Steel well casing, 8". Materials only.	Foot	\$21.99	150	\$3,298.50
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$252.16	1	\$252.16